Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Luda Voskov, Project Manager; Environmental Cleanup II Section, Remediation Division

Date: January 24, 2008

From: Larry Champagne; Technical Support Section, Remediation Division

Subject: Gulfco Marine Maintenance NPL Superfund Site
Phase 1-2 Wetland Sediment Investigation Data and Proposed Phase 3 Wetland Sediment Investigation Activities – dated November 1, 2007

As you know, there was a conference call held yesterday between EPA, TCEQ, and Natural Resource Trustee representatives in which some of the aspects of this report were discussed. Although the main purpose of the call was to discuss the need for and timing of any toxicological testing and tissue collection, it was learned that the proposed Phase 3 activities had in fact already occurred. Nevertheless, for the record, I have completed a review of this report and am submitting the following comments.

1. Based on the Phase 1-2 sediment concentrations, there is apparent ecological risk to the benthic community. Numerous PAHs, zinc, lead, and 4,4' DDT concentrations exceed the TCEQ benthic protective concentration levels (PCLs). A benthic PCL for a particular chemical of concern (COC) can be derived by calculating the midpoint (average) between the value listed in Table 3-3 of TCEQ (2006) and the corresponding value listed in Table A-2. The values in Table A-2 are second effects levels representing concentrations that are very likely to cause a deleterious effect to benthic organisms. Several concentrations also exceeded these second effects levels. These benchmarks and the PCL methodology were developed through the efforts of a multi-stakeholder ecological workgroup.

2. Many of the preliminary screening values (PSVs) used in this report were obtained from TCEQ's (2001) ecological risk assessment (ERA) guidance document. However, some of the PSVs are human health numbers and should be replaced, where available, with more conservative ecologically-based numbers. This is especially true for the volatile organic compounds (VOCs). TCEQ (2006) is an update to its previous ERA guidance document and adds 32 marine sediment screening benchmarks for VOCs in Table 3-3. This update is available at http://www.tceq.state.tx.us/remediation/eco/eco.html and should be reviewed for ecological PSVs for all site COCs.

3. With regard to the conference call, I initially felt that it was premature to be talking about toxicological testing and tissue collection because the Phase 1-2

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data indicated that the lateral extent of contamination at the site had yet to be determined. However, upon hearing from EPA that the Phase 3 sampling to step further out into the wetlands to determine extent had already occurred and that it was now believed that extent had been determined, I agree that bulk sediment toxicological testing is appropriate. This is based on my belief that the greatest ecological risk at the site will likely be to the benthic community; although, food chain evaluations and exposure calculations for wildlife will still need to be conducted as part of the basic screening level ecological risk assessment (SLERA) approach. It was suggested that a 28-day chronic sediment toxicity test be conducted on the estuarine amphipod *Leptocheirus*.

4. In conjunction with the SLERA, the responsible parties should prepare and submit a sediment toxicity work plan. Minimally, this work plan should identify proposed sample locations, number of samples, sampling methodology (equipment, depth interval, volume…), the analytical laboratory (chemical analysis of sample aliquot), the toxicological testing laboratory, the standardized toxicological testing protocols and, if applicable, the lab's modification to these protocols. In addition, a discussion should be included that describes how the responsible parties will utilize these lines-of-evidence (chemistry and toxicity) to develop a proposed ecological risk management recommendation for the site. EPA, TCEQ, and Natural Resource Trustee personnel should be given the opportunity to provide oversight of field reconnaissance activities to determine sample locations.

References:

TCEQ (TNRCC). 2001. Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas RG-263 [Revised]. December. http://www.tceq.state.tx.us/remediation/eco/eco.html

TCEQ. 2006. Update to Guidance for Conducting Ecological Risk Assessments at Remediation Sites in Texas RG-263 (Revised). January.